WHAT IS CLAIMED IS:

1. An optical modulator that modulates a light beam irradiated by a light source in accordance with image information, comprising:

an optical modulator body having a pair of transparent substrates between which an electro-optic material is sealed; and

a holding frame that houses the optical modulator body thereinside, the holding frame having an approximately C-shaped cross section constructed by a base portion having an opening corresponding to an image formation area of the optical modulator body and a pair of lateral portions vertically provided on opposing sides of the base portion.

2. The optical modulator according to claim 1, further comprising a frame member disposed on a light-irradiation side of the optical modulator body and having an opening corresponding to the image formation area of the optical modulator body,

the frame member having a pair of bent portions formed at a position opposing the pair of lateral portions, the lateral portions and the bent portions being abutted and bonded.

3. The optical modulator according to claim 1,

wherein a dustproof glass that prevents adhesion of dust is closely attached to a light-incident side and/or the light-irradiation side of the optical modulator body, the dustproof glass being made of a heat-conductive transparent material.

4. The optical modulator according to claim 3,

wherein at least three incident-side dustproof glass positioners for the dustproof glass on the light-incident side are provided around the opening of the holding frame.

5. The optical modulator according to claim 4,

wherein the incident-side dustproof glass positioner includes two first positioners located on a downstream of a cooling air introduced from the outside of the optical modulator to be in contact with the surface of the dustproof glass on the light-incident side, and a second positioner to be in contact with a side of the light-incident side dustproof glass orthogonal with the surface of the light-incident side dustproof glass touching the first

positioners.

6. The optical modulator according to claim 4,

wherein the incident-side dustproof glass positioner has a thickness not less than the sum of the half of the thickness of the transparent substrate located on the light-incident side and the thickness of the dustproof glass and less than the sum of the thickness of the transparent substrate and the thickness of the incident-side dustproof glass.

7. The optical modulator according to claim 3,

wherein at least three irradiation-side dustproof positioners for the dustproof glass on the light-irradiation side are provided around the opening of the frame member.

8. The optical modulator according to claim 7,

wherein the irradiation-side dustproof positioner includes two first positioners located on a downstream of a cooling air introduced from the outside of the optical modulator to be in contact with the surface of the light-irradiation side dustproof glass and a second positioner to be in contact with a side of the light-irradiation side dustproof glass orthogonal with the surface of the light-irradiation side dustproof glass touching the first positioners.

9. The optical modulator according to claim 7,

wherein the thickness of the irradiation-side dustproof glass positioner is not less than the sum of half of the thickness of the transparent substrate located on the light-irradiation side and the thickness of the light-irradiation side dustproof glass and is less than the sum of the thickness of the transparent substrate and the thickness of the light-irradiation side dustproof glass.

10. The optical modulator according to claim 1,

wherein a bent rib bent toward the inside of the holding frame is formed on a distal end of the lateral portion of the holding frame.

11. The optical modulator according to claim 10,

wherein an elongated hole extending from the lateral portion to the bent rib is formed approximately at the center of the holding frame.

12. The optical modulator according to claim 10,

wherein a pair of notched grooves spaced apart along the extending direction of the bent rib are formed on the distal end of the bent rib, the pair of notched grooves determining a location of an optical converter disposed on a downstream of the optical modulator, the optical converter optically converting the irradiated light beam.

13. An optical device, comprising a plurality of optical modulators that respectively modulates a plurality of color lights in accordance with image information;

a color synthesizing optical device having a plurality of light-incident sides opposing the respective optical modulators, the color synthesizing optical device synthesizing the respective color lights modulated by the respective optical modulators;

a base made of heat-conductive material fixed on at least one of sides of the color synthesizing optical device intersecting the plurality of light-incident sides of the color synthesizing optical device; and

an optical converter interposed between the optical modulator and the light-incident side, the optical converter having an end attached to the base and an optical conversion film provided on a substrate, the optical conversion film optically converting the color light irradiated by the optical modulator,

wherein the optical modulator is the optical modulator according to claim 1.

14. The optical device according to claim 13,

wherein the base has a plate-shaped base body disposed on the side of the color synthesizing optical device and a plurality of ribs formed by bending sides of the base body along the light-incident sides of the color synthesizing optical device on which the optical modulator is attached at a plurality of locations,

wherein one or more slit that divides a plurality of attachment surfaces of the optical modulator is formed on a distal end of the projection of the respective ribs.

15. The optical device according to claim 14, wherein an elongated hole extending

along the bent portion of the rib is formed on the base.

16. The optical device according to claim 15, wherein the optical converter is attached to the rib on the inside of the attachment surfaces of the optical modulator,

wherein the external end of the elongated hole is bent in a direction for the rib to be projected along the end of the attached optical converter.

17. The optical device according to claim 13, wherein the base has at least two attachments used for fixing the base to an optical component casing in which an illuminating optical axis of the light beam irradiated by the light source is set and the optical device is accommodated and disposed at a predetermined position on the illuminating optical axis.

18. The optical device according to claim 17,

wherein one of the attachments is provided approximately at the center of a first side of the base and is respectively provided on corners of a second side opposing the first side.

19. The optical device according to claim 13,

wherein the base is a block member having a plurality of surfaces on which the optical modulator and the optical converter are attached.

20. The optical device according to claim 19,

wherein the optical modulator is bonded on the surface of the base at a plurality of locations, and

wherein a groove extending along the side of the color synthesizing optical device on which the base is fixed and having an end dividing the plurality of surfaces for the optical modulator to be attached is formed on the base.

21. The optical device according to claim 20,

wherein the optical converter is attached on the inner side of the plurality of surfaces on which the optical modulator is attached,

wherein a second groove extending along the side of the color synthesizing optical device on which the base is fixed and having an end dividing the attachment surface of the optical modulator and the attachment surface of the optical converter is formed on the base.

22. The optical device according to claim 19,

wherein the base has a guide hole and a screw hole for the base to be guided and fixed to an optical component casing in which an illuminating optical axis of the light beam irradiated by the light source is set and the optical device is accommodated and disposed at a predetermined position on the illuminating optical axis,

wherein the screw hole is formed approximately at the center of the base.

23. The optical device according to claim 13,

wherein the substrate is provided with a plating layer adapted to soldering at least on a surface opposing the base.

24. The optical device according to claim 23,

wherein the plating layer is made of a field-free nickel-phosphorus plating layer and a solder-plating layer.

25. The optical device according to claim 13,

wherein the substrate is made of material with heat-conductivity of 10W/(m·K) or more.

26. A projector that modulates a light beam irradiated by a light source in accordance with image information and forms an optical image to project the optical image in an enlarged manner, comprising: the optical modulator according to claim 1.

27. A projector that modulates a light beam irradiated by a light source in accordance with image information and forms an optical image to project the optical image in an enlarged manner, comprising: the optical device according to claim 13.